PB-240 314

COMMUNITY LAKE, NEW HAVEN COUNTY, CONNECTICUT

Pacific Northwest Environmental Research Laboratory

Prepared for:

National Environmental Research Center
Connecticut Department of Environmental Protection
Connecticut National Guard

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16. ABSTRACT

Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivded according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

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REPORT

ON

COMMUNITY LAKE

NEW HAVEN COUNTY

CONNECTICUT

EPA REGION I

WORKING PAPER No. 178

WITH THE COOPERATION OF THE

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

AND THE

CONNECTICUT NATIONAL GUARD

JANUARY, 1975

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the Connecticut Department of Environmental Protection for professional involvement and to the Connecticut National Guard for conducting the tributary sampling phase of the Survey.

John J. Curry, Director of the former Water Resources Commission; Roy B. Anderson, Principal Sanitary Engineer, and Steven Gerdsmeier, Sanitary Engineer, of the Water Compliance Unit, Department of Environmental Protection; and Sam Suffern, Assistant Director of Water and Related Resources, Department of Environmental Protection, provided invaluable lake documentation and counsel during the course of the Survey.

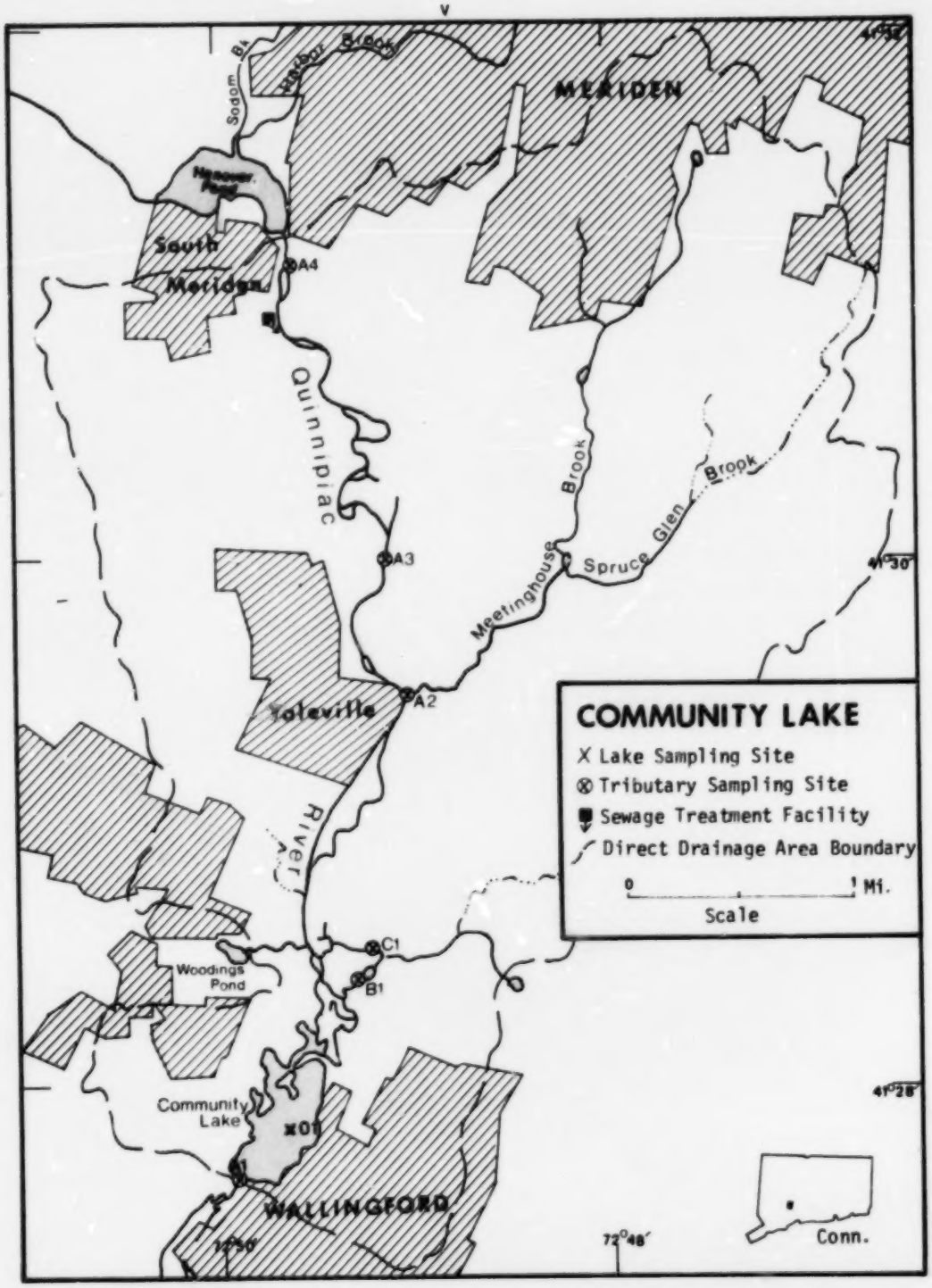
Major General John F. Freund, the Adjutant General of Connecticut, and Project Officer Lieutenant Colonel Daniel M. McGuire, who directed the volunteer efforts of the Connecticut National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF CONNECTICUT

LAKE NAME	COUNTY
Aspinook Pond	New London, Windham
Bantam	Litchfield
Community	New Haven
Eagleville	Tolland
Hanover Pond	New Haven
Housatonic Impoundments:	
Housatonic	Fairfield, New Haven
Lillinonah	Fairfield, Litchfield, New Haven
Zoar	Fairfield, New Haven


COMMUNITY LAKE
X Lake Sampling Site
⊗ Tributary Sampling Site
Sewage Treatment Facility
Direct Drainage Area Boundary
0
1 Mi.
Scale
MERIDEN
South Meriden
Quinnipiac
River
Meetinghouse Brook
Spruce Glen Brook
Harbor Brook
Sodom Bk
Hanover Pond
Yalesville
Woodings Pond
Community Lake
WALLINGFORD
A2
A3
A4
B1
C1
X01
41°32'
41°30'
41°28'
72°48'
Conn.

COMMUNITY LAKE

STORET NO. 0903

I. CONCLUSIONS

A. Trophic Condition:

Community Lake is hypereutrophic with massive algal growths, very high nutrient levels, high turbidity, and conductivity high for lakes in this region. The control yield of the algal assay was very high. The high productivity suggested is substantiated by the high algal counts and chlorophyll a values noted in August.

B. Rate-Limiting Nutrient:

Algal assay results indicate that phosphorus and nitrogen were present in such high levels at the time of sampling that some other unidentified nutrient limited growth of the assay alga.

The lake data indicate nitrogen limitation at the other sampling times (N/P ratios were less than 9/1), but it is likely that the unidentified nutrient was limiting at those times as well.

C. Nutrient Controllability:

1. Point sources--During the sampling year, Community Lake received a total phosphorus load at a rate more than 65 times greater than the rate proposed by Vollenweider (in press) as "dangerous"; i.e., a eutrophic rate (see page 12). The hydraulic

retention time of Community Lake is certain to be very short, and Vollenweider's model may not be applicable to such water bodies. Nonetheless, the trophic condition of Community Lake is evidence of the extremely large nutrient loads received.

It is calculated that even complete removal of phosphorus at the known point sources impacting this lake, as well as upstream Hanover Pond*, would still leave a loading rate more than 18 times the eutrophic rate, and it is concluded that point-source phosphorus control within the limits of the Survey study area would not significantly improve the trophic condition of the lake.

2. Non-point sources (see page 12)--The phosphorus export of the Quinnipiac River was very high during the sampling year and is indicative of the point-source phosphorus contributions to Hanover Pond as well as unmeasured point-sources elsewhere in the drainage. It is concluded that reduction of the Quinnipiac River phosphorus export to less than the lowest export measured in an unimpacted tributary stream in the area (Sodom Brook to Hanover Pond - 159 $lbs/mi^2/yr$) would be necessary for a significant improvement in the quality of Community Lake as well as Hanover Pond. It appears that a basin-wide study, including land-use analysis, is needed to identify the point and non-point sources of phosphorus not accounted for in this Survey.

* Working Paper No. 180.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

A. Lake Morphometry:

1. Surface area: 90 acres.
2. Mean depth: unknown.
3. Maximum depth: 8 feet.
4. Volume: unknown.

B. Tributary and Outlet:
(See Appendix A for flow data)

1. Tributaries -

Name	Drainage area*	Mean flow*
Quinnipiac River	103.0 mi^2	183.8 cfs
Minor tributaries & immediate drainage -	5.9 mi^2	10.9 cfs
Totals	108.9 mi^2	194.7 cfs

2. Outlet -

Quinnipiac River	109.0 mi^2**	194.7 cfs

C. Precipitation***:

1. Year of sampling: 64.9 inches.
2. Mean annual: 47.0 inches.

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* Drainage areas are accurate within ±1%; gaged mean daily and mean monthly flows are accurate within ±10%; ungaged mean daily and mean monthly flows are accurate within ±20%; and normalized mean monthly flows are accurate within ±10% for gaged streams and within ±12% (high flow) to 27% (low flow) for ungaged streams.

** Includes area of lake.

*** See Working Paper No. 1, "Survey Methods".

III. LAKE WATER QUALITY SUMMARY

Community Lake was sampled three times during the open-water season of 1972 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from one or more depths at a single station on the lake (see map, page v). During each visit, a single depth-integrated (near bottom to surface) sample was collected for phytoplankton identification and enumeration, and a similar sample was taken for chlorophyll a analysis. During the last visit, a single five-gallon depth-integrated sample was composited for algal assays. The maximum depth sampled was 5 feet.

The results obtained are presented in full in Appendix B, and the data for the fall sampling period, when the lake essentially was well-mixed, are summarized below. Note, however, the Secchi disc summary is based on all values.

For differences in the various parameters at the other sampling times, refer to Appendix B.

A. Physical and chemical characteristics:

Parameter	Minimum	Mean	Median	Maximum
		FALL VALUES (10/04/72)		
Temperature (Cent.)	15.3	15.3	15.3	15.3
Dissolved oxygen (mg/l)	6.0	6.0	6.0	6.0
Conductivity (µmhos)	350	350	350	350
pH (units)	7.3	7.3	7.3	7.3
Alkalinity (mg/l)	80	80	80	80
Total P (mg/l)	0.990	1.035	1.035	1.080
Dissolved P (mg/l)	0.890	0.905	0.905	0.920
NO_2 + NO_3 (mg/l)	1.840	1.845	1.845	1.850
Ammonia (mg/l)	2.670	2.720	2.720	2.770
		ALL VALUES		
Secchi disc (inches)	36	36	36	36

B. Biological characteristics:

1. Phytoplankton* -

Sampling Date	Dominant Genera	Number per ml
08/03/72	1. Chlamydomonas	14,414
	2. Scenedesmus	631
	3. Navicula	540
	4. Cyclotella	450
	5. Synedra	450
	Other genera	1,893
	Total	18,378
10/04/72	1. Flagellates	2,830
	2. Dinobryon	1,170
	3. Navicula	679
	4. Melosira	528
	5. Cryptomonas	264
	Other genera	2,189
	Total	7,660

* The May sample was lost in shipment.

2. Chlorophyll a -
(Because of instrumentation problems during the 1972 sampling, the following values may be in error by plus or minus 20 percent.)

Sampling Date	Station Number	Chlorophyll a (μg/l)
05/29/72	01	18.4
08/03/72	01	108.7
10/04/72	01	17.8

C. Limiting Nutrient Study:

1. Autoclaved, filtered, and nutrient spiked -

Spike (mg/l)	Ortho P Conc. (mg/l)	Inorganic N Conc. (mg/l)	Maximum yield (mg/l-dry wt.)
Control	0.490	2.247	59.3
0.012 P	0.502	2.247	60.5
0.024 P	0.514	2.247	56.2
0.060 P	0.550	2.247	64.1
0.060 P + 10.0 N	0.550	12.247	63.9
10.0 N	0.490	12.247	52.3

2. Discussion -

The control yield of the assay alga, *Selenastrum capricornutum*, indicates that the potential primary productivity of Community Lake was extremely high. Spikes with only phosphorus, only nitrogen, and both phosphorus and nitrogen failed to significantly increase the yield. It appears that these two major nutrients were present in such high concentrations that some other nutritional element (not determined) was limiting.

The lake data indicate nitrogen limitation at the other sampling times (N/P ratios were less than 9/1); however, in view of the high concentrations of nitrogen and phosphorus at those times, it is likely that the unidentified nutrient was limiting then as well.

IV. NUTRIENT LOADINGS
(See Appendix C for data)

For the determination of nutrient loadings, the Connecticut National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v), except for the high run-off months of March and April when two samples were collected. Sampling was begun in August, 1972, and was completed in September, 1973.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the Connecticut District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. The background nutrient loads shown for the Quinnipiac River are those measured at the outlet of upstream Hanover Pond** and reflect the point-source discharges to that water body (essentially no retention in Hanover Pond).

Nutrient loadings for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated using the mean concentrations in the unnamed stream at station B-1 and the mean annual ZZ flow.

The operator of the Meriden wastewater treatment plant provided a limited number of effluent samples and corresponding flow data.

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* See Working Paper No. 1.
** See Working Paper No. 180.

A. Waste Sources:

1. Known muncipal* -

Name	Pop. Served	Treatment	Mean Flow (mgd)	Receiving Water
Meriden	44,800	trickling filter	6.900	Quinnipiac River

2. Known industrial - None

* Armet, 1973.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	lbs P/ yr	% of total
a. Tributaries (non-point load) -		
Quinnipiac River	124,450	59.3
b. Minor tributaries & immediate drainage (non-point load) -	1,240	0.6
c. Known municipal -		
Meriden	84,310	40.1
d. Septic tanks - Unknown	-	-
e. Known industrial - None	-	-
f. Direct precipitation* -	10	<0.1
Total	210,010	100.0

2. Outputs -

Lake outlet - Quinnipiac River 202,440

3. Net annual P accumulation - 7,570 pounds

* See Working Paper No. 1.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	lbs N/ yr	% of total
a. Tributaries (non-point load) -		
Quinnipiac River	839,390	66.0
b. Minor tributaries & immediate drainage (non-point load) -	35,520	2.8
c. Known municipal -		
Meriden	395,880	31.1
d. Septic tanks -Unknown	-	-
e. Known industrial - None	-	-
f. Direct precipitation* -	870	0.1
Total	1,271,660	100.0

2. Outputs -

Lake outlet - Quinnipiac River 1,220,530

3. Net annual N accumulation - 51,130 pounds

* See Working Paper No. 1.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	lbs $P/mi^2/yr$	lbs $N/mi^2/yr$
Quinnipiac River	1,208	8,149

E. Yearly Loading Rates:

In the following table, the existing phosphorus loading rates are compared to those proposed by Vollenweider (in press). Essentially, his "dangerous" rate is the rate at which the receiving water would become eutrophic or remain eutrophic; his "permissible" rate is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic rate would be considered one between "dangerous" and "permissible".

Note that Vollenweider's model may not be applicable to water bodies with very short detention times.

	Total Phosphorus		Total Nitrogen	
Units	Total	Accumulated	Total	Accumulated
lbs/acre/yr	2,333.4	84.1	14,129.6	568.1
grams/m^2/yr	261.54	9.43	1,583.7	63.7

Vollenweider loading rates for phosphorus ($g/m^2/yr$) based on area and mean outflow of Community Lake:

"Dangerous" (eutrophic rate)	4.00
"Permissible" (oligotrophic rate)	2.00

V. LITERATURE REVIEWED

Armet, Brian W., 1973. Wastewater treatment plant questionnaire. CT. Dept. of Env. Prot., Hartford.

Vollenweider, Richard A. (in press). Input-output models. Schweiz. Z. Hydrol.

VII. APPENDICES

APPENDIX A

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR CONNECTICUT 11/26/74

LAKE CODE 0903 COMMUNITY LAKE

TOTAL DRAINAGE AREA OF LAKE 109.00

TRIBUTARY	SUB-DRAINAGE AREA	NORMALIZED FLOWS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
0903A1	109.00	234.00	248.00	380.00	337.00	225.00	149.80	99.10	93.40	103.80	107.70	168.00	195.00	194.69
0903A2	103.00	221.00	234.00	356.00	316.00	212.00	144.00	96.00	89.00	100.00	102.00	157.00	183.00	183.81
0903ZZ	6.00	13.00	14.00	24.00	21.00	13.00	5.80	3.10	4.40	3.80	5.70	11.00	12.00	10.88

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 109.00
SUM OF SUB-DRAINAGE AREAS = 109.00

TOTAL FLOW IN = 2340.80
TOTAL FLOW OUT = 2340.80

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
0903A1	8	72	147.00	19	132.00				
	9	72	89.00	23	43.00				
	10	72	136.00	21	106.00				
	11	72	326.00	18	247.00				
	12	72	525.00	9	1300.00				
	1	73	395.00	13	238.00				
	2	73	535.00	10	409.00				
	3	73	340.00	10	419.00	27	451.00		
	4	73	517.00	14	364.00	30	396.00		
	5	73	350.00	19	309.00				
	6	73	134.00	2	264.00				
	7	73	187.00	31	100.00				
	8	73	106.00	31	70.00				
	9	73	105.00	8	70.00				
0903A2	8	72	140.00	19	126.00				
	9	72	86.00	23	80.00				
	10	72	129.00	21	100.00				
	11	72	305.00	18	231.00				
	12	72	493.00	9	1220.00				
	1	73	373.00	13	225.00				
	2	73	501.00	10	383.00				
	3	73	318.00	10	392.00	27	422.00		
	4	73	484.00	14	341.00	30	371.00		
	5	73	328.00	19	289.00				
	6	73	182.00	2	247.00				
	7	73	177.00	31	95.00				
	8	73	100.00	31	66.00				
	9	73	99.00	8	66.00				

TRIBUTARY FLOW INFORMATION FOR CONNECTICUT 11/26/74

LAKE CODE 0903 COMMUNITY LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
090377	8	72	6.90	19	6.20				
	9	72	3.30	23	3.00				
	10	72	7.20	21	5.60				
	11	72	21.00	18	16.00				
	12	72	32.00	9	80.00				
	1	73	22.00	13	13.00				
	2	73	34.00	10	26.00				
	3	73	22.00	10	27.00	27	29.00		
	4	73	33.00	14	23.00	30	25.00		
	5	73	22.00	19	20.00				
	6	73	12.00	2	17.00				
	7	73	10.00	31	5.50				
	8	73	5.80	31	3.80				
	9	73	5.80	8	3.80				

APPENDIX B

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 74/11/26

090301
41 27 50.0 072 49 43.0
COMMUNITY LAKE
09 CONNECTICUT

11EPALES 2111202
3 0006 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/05/29	16 20	0000	20.2	12.0	36	280	7.60	61	1.500	0.570	0.488	0.308
	16 20	0005	20.2	12.0		280	7.60	63	1.500	0.580	0.420	0.360
72/08/03	18 15	0000	23.4	9.6		280	7.00	66	1.600	0.550	0.370	0.252
72/10/04	08 40	0000			36	350	7.25	80	1.850	2.670	0.990	0.890
	08 40	0004	15.3	6.0		350	7.25	80	1.840	2.770	1.080	0.920

18

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/05/29	16 20	0000	18.4J
72/08/03	18 15	0000	108.7J
72/10/04	08 40	0000	17.8J

J VALUE KNOWN TO BE IN ERROR

APPENDIX C

TRIBUTARY and WASTEWATER
TREATMENT PLANT DATA

STORET RETRIEVAL DATE 74/11/26

0903A1 LS0903A1
41 27 30.0 072 50 00.0
QUINNIPIAC RIVER
09 7.5 WALLINGFORD
O/COMMUNITY LAKE
HALL ST BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	10 25		1.560	1.850	0.890	0.359	0.610
72/09/23	10 04		1.545	2.700	1.500	0.270	0.870
72/10/21	09 40		0.570	2.650	0.375	0.165	0.830
72/11/18	09 00		1.000	1.540	0.740	0.273	0.430
72/12/09	08 45		0.980	1.320	0.270	0.088	0.176
73/01/13	09 15		2.000	1.980	1.000	0.350	0.570
73/02/10	10 00		1.340	0.940	0.410	0.135	0.230
73/03/10	11 35		0.990	1.300	0.420	0.169	0.260
73/03/27	10 15		1.080	1.400	0.420	0.138	0.270
73/04/14	08 45		1.140	1.370	0.440	0.176	0.300
73/04/30	11 55		1.040	1.320	0.450	0.164	0.270
73/05/19	08 45		1.220	1.400	0.550	0.231	0.375
73/06/02	08 45		1.000	1.500	0.530	0.270	0.440
73/07/31	13 25		1.380	2.940	0.750	0.390	0.590
73/08/31	09 45		1.600	2.900	0.870	0.690	1.075
73/09/08	09 45		1.540	3.100	1.580	0.640	0.960

STORET RETRIEVAL DATE 74/11/26

0903A2 LS0903A2
41 29 30.0 072 49 00.0
QUINNIPIAC RIVER
09 7.5 WALLINGFORD
I/COMMUNITY LAKE
ST HWY 88 BRDG
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	09 45		1.600	1.800	0.750	0.460	0.730
72/09/23	09 14		1.700	3.000	0.280	0.546	0.570
72/10/21	09 15		0.655	2.950	0.345	0.225	0.300
72/11/18	08 30		1.190	1.680	0.530	0.260	0.399
72/12/09	07 55		0.980	1.300	0.230	0.087	0.154
73/01/13	08 00		2.040	1.600	0.760	0.240	0.400
73/02/10	09 30		1.400	0.780	0.378	0.120	0.210
73/03/10	11 00		0.990	0.920	0.378	0.150	0.240
73/03/27	10 40		0.980	0.900	0.378	0.132	0.250
73/04/14	08 15		1.140	1.000	0.430	0.160	0.260
73/04/30	11 05		1.100	1.200	0.480	0.168	0.290
73/05/19	07 45		1.160	1.150	0.450	0.198	0.330
73/06/02	08 15		1.020	1.890	0.460	0.210	0.370
73/07/31	13 50		1.500	1.800	0.880	0.500	0.680
73/08/31	10 07		2.020	2.520	2.000	1.200	1.400
73/09/08	08 30		1.890	3.500	2.000	1.050	1.570

STORET RETRIEVAL DATE 74/11/26

0903A3 LS0903A3
41 30 00.0 072 49 00.0
QUINNIPIAC RIVER
09 7.5 WALLINGFORD
I/COMMUNITY LAKE
OAK ST BRDG BELOW MERIDEN STP
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	09 35		1.600	2.000	0.770	0.470	0.730
72/09/23	09 00		1.900	2.450	0.240	0.335	0.380
72/10/21	09 10		0.490	3.100	0.300	0.170	0.970
72/11/18	08 15		1.100	1.320	0.630	0.260	0.399
72/12/09	07 42		1.000	0.750	0.210	0.084	0.154
73/01/13	07 45		1.900	1.470	0.790	0.250	0.400
73/02/10	09 15		1.340	0.910	0.410	0.126	0.220
73/03/10	10 45		0.980	1.000	0.430	0.170	0.270
73/03/27	10 50		1.000	1.450	0.440	0.147	0.270
73/04/14	08 00		1.120	1.000	0.430	0.154	0.260
73/04/30	11 20		1.060	1.700	0.660	0.189	0.320
73/05/19	07 30		1.160	1.150	0.460	0.198	0.310
73/06/02	08 00		1.000	1.400	0.480	0.210	0.365
73/07/31	13 40		1.580	3.000	1.260	0.620	0.840
73/08/31	09 50		1.260	2.310	0.850	1.020	1.250
73/09/08	08 05		2.200	2.400	1.370	0.950	1.250

STORET RETRIEVAL DATE 74/11/26

090381 LS0903B1
41 28 30.0 072 49 30.0
NO NAME
09 7.5 WALLINGFORD
T/COMMUNITY LAKE
ROAD OFF US 5 CROSSING
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19	10 00		0.290	0.200	0.115	0.008	0.024
72/09/23	09 45		0.370	1.150	0.134	0.010	0.046
72/10/21	09 25		0.647	1.200	0.120	0.005K	0.020
72/11/18	08 45		0.670	0.350	0.132	0.009	0.020
72/12/09	08 10		0.710	0.610	0.100	0.011	0.035
73/01/13	08 15		0.940	0.230	0.060	0.011	0.015
73/02/10	09 45		0.780	0.215	0.066	0.006	0.040
73/03/10	11 15		0.510	0.320	0.032	0.011	0.035
73/03/27	10 30		0.570	0.320	0.050	0.013	0.030
73/04/14	08 30		0.710	0.540	0.066	0.009	0.030
73/04/30	11 30		0.510	0.520	0.037	0.009	0.020
73/05/19	08 18		0.510	0.480	0.048	0.014	0.025
73/06/02	08 30		0.440	1.050	0.073	0.009	0.035
73/07/31	14 05		0.260	2.100	0.108	0.008	0.060
73/08/31	10 20		0.230	0.255	0.076	0.029	0.030
73/09/08	09 00		0.210	0.360	0.080	0.009	0.050

K VALUE [illegible]
LESS THAN [illegible]

STORET RETRIEVAL DATE 74/11/26

0903C1 LS0903C1
41 28 30.0 072 49 30.0
NO NAME
09 7.5 WALLINGFORD
T/COMMUNITY LAKE
ROAD OFF US 5 CROSSING
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/08/19			0.810	0.780	0.058	0.063	0.105
72/09/23	09 50		0.710	0.550	0.060	0.032	0.085
72/10/21	09 28		1.370	0.375	0.078	0.096	0.126
72/11/18	08 50		2.600	0.560	0.035	0.028	0.046
72/12/09	08 20		1.860	1.050	0.035	0.027	0.135
73/01/13	08 30		3.300	0.270	0.025	0.026	0.060
73/02/10	09 45		3.100	0.140	0.019	0.016	0.035
73/03/10	11 20		2.400	0.270	0.016	0.115	0.140
73/03/27	10 25		2.100	0.100K	0.020	0.069	0.110
73/04/14	08 35		2.300	0.100K	0.017	0.015	0.030
73/04/30	11 40		1.640	0.315	0.010	0.028	0.045
73/05/19	08 38		1.760	0.160	0.020	0.023	0.037
73/06/02	08 30		1.760	0.860	0.027	0.032	0.055
73/07/31	14 00		1.120		0.100	0.180	0.200
73/09/08	09 15		1.180	0.390	0.029	0.056	0.080

STORET RETRIEVAL DATE 74/11/27

090350 TF090350 P044R00
41 31 00.0 072 49 30.0
MERIDEN
09 7.5 MERIDEN
T/COMMUNITY LAKE
QUINEBAUG RIVER
11EPALES 2141204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P	50051 FLOW RATE INST MGD	50053 CONDUIT FLOW-MGD MONTHLY
73/09/06	00 00								
CP(T)-									
73/09/06	08 00			17.600			5.000	6.000	6.000
73/10/04	00 00								
CP(T)-									
73/10/04	08 00		0.520	27.000	13.700	4.600	6.400	7.000	6.500
73/11/07			0.320	26.000	8.400	3.900	6.700	5.900	6.000
73/12/06			2.100	8.600	0.170	1.200	2.000	6.000	6.000
74/01/06			2.500	3.900	0.440	0.820	1.250		
74/02/04	08 00								
CP(T)-									
74/02/04	16 00		2.600	10.000	4.800	1.300	1.800	12.000	10.000
74/03/01	08 00								
CP(T)-									
74/03/01	16 00		1.760	7.225	0.130	1.080	1.980		10.000
74/05/03	09 00								
CP(T)-									
74/05/03	15 00		1.440	5.600	1.850	1.950	1.950		12.000
74/06/05	07 00								
CP(T)-									
74/06/05	15 00		1.080	10.000	1.700	2.200	3.100	0.006	